

**New and little-known Oriental *Melittia* Hübner
(Lepidoptera, Sesiidae),
from the collection of Muséum d'histoire naturelle, Genève**

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New and little-known Oriental *Melittia* Hübner (Lepidoptera, Sesiidae), from the collection of Muséum d'histoire naturelle, Genève. - A small collection of clearwing moth of the genus *Melittia* Hübner, 1819 from Vietnam and the Philippines, deposited in the Muséum d'histoire naturelle, Genève, Switzerland, is revised. Two new species, *M. romieuxi* sp. n. and *M. luzonica* sp. n., are described from Vietnam and the Philippines, respectively. *M. newara* Moore, 1879 and *M. eurytion* (Westwood, 1848) are recorded for Vietnam for the first time and the latter species for Palawan Id, Philippine Is. as well. A redescription of *M. gorochovi* Gorbunov, 1988 is presented. *Melittia eurytion* ab. *microfenestrata* Strand, [1916] is synonymised under *Melittia formosana* Matsumura, 1911.

Key-words: Sesiidae - *Melittia* - new species - taxonomy - Vietnam - the Philippines.

INTRODUCTION

The genus *Melittia* Hübner, [1819] is, perhaps, the largest genus of Sesiidae. It is distributed worldwide in tropical and subtropical areas and consists of more than a hundred presently known species. Unfortunately, most of them have been, in the past up to the beginning of this century, described from a single or a few specimens. Their original descriptions are very laconic. The descriptions contain, as a rule, only a few external characters. This considerably hampers the study of these beautiful clearwing moths. In addition, very important data about the types, type localities, etc., are

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scattered among numerous books and periodicals, which in many cases are rare and nearly unavailable. The majority of the species *Melittia* are highly beautiful, brightly coloured and superficially bumble-bee-like species. They are diurnal heliophile moths, but sometimes can be collected by the light trap. A number of everywhere known larvae of *Melittia* live inside the stalks of Cucurbitaceae, especially of the genus *Trichosanthes* (cucumber, pumpkin), and they may be easily reared.

Material was studied from Muséum d'histoire naturelle, Genève (MHNG). — The Natural History Museum, London, Great Britain (BMNH). — Museum für Naturkunde, Zentralinstitut der Humboldt-Universität zu Berlin, Germany (ZMHB). — collection O. Gorbunov, Moscow, Russia (CG).

The holotypes of new species described herein are deposited in MHNG, Switzerland.

***Melittia gorochovi* Gorbunov (Figs 1, 2, 9)**

Melittia gorochovi Gorbunov, 1988: 195, figs 3–1, 4–1. Type locality: Vietnam, Shonla Prov., Shongma. Holotype male (CG).

= *Melittia indica* Butler, 1874 — Le Cerf, 1917: 182 (part.), Pl. 476, Fig. 3922 (misdetermination).

MATERIAL EXAMINED: 1 male (holotype), Vietnam, Shonla prov., Shongma vic., 3–10.V.1986, A.V. Gorokhov leg. (genital preparation No. G0064) (CG); 1 male, Vietnam, Sam Con à Vang Lom, 10.IV.1950, J. Romieux leg. (genital preparation No. GA-050) (MHNG).

REDESCRIPTION. Male (holotype) (Fig. 1). Alar expanse 29.5 mm; body length 15.5 mm; forewing 13.0; antenna 7.0 mm.

Head: antenna dorsally black with violet sheen, with a few snow-white scales dorso-internally and an elongate yellow spot dorso-externally at tip; ventrally light brown; frons grey-brown with purplish sheen, with a narrow pale yellow strip laterally; labial palpus basally pale yellow, apically black with a few yellow scales, second joint yellow with two, narrow, black stripes both ventro-internally and ventro-externally; vertex mixed with black and yellow scales; pericephalic hairs dorsally mixed with olive, black and a few white scales, laterally pale yellow to white.

Thorax: patagia dorsally mixed with yellow-olive, light brown and a few black scales; tegula, meso- and metathorax dark brown with violet sheen, with admixture of yellow-olive scales; thorax laterally mixed with grey-brown with violet sheen, pale yellow and yellow-olive scales.

Legs: fore coxa pale yellow with admixture of individual black scales basally; mid tibia internally black; externally at base and apically narrowly black; medially yellow ventrally and light brown-yellow with a small white spot dorsally; mid tarsus black with a small white spot both at base of first and second tarsomeres externally; hind tibia externally narrowly black at base; black with violet sheen, with a small white spot ventro-externally; dorso-externally light brown-yellow with a small snow-white spot medially and with a small yellow spot at base of apical spurs; dorsally yellow with a few light brown-orange scales at tip; spurs black; hind tarsus black with greenish sheen, with a small pale yellow spot medio-externally.

Abdomen: dorsally black with bluish sheen; tergites 1 and 2 densely covered with dirty olive-green scales; tergites 3–7 each with a narrow, olive-green, distal margin; ventrally entirely pale yellow; anal tuft small, black with a few yellow scales.

Forewing: basally densely covered with yellow-olive and light brownish scales; costal margin and veins within external transparent area black with violet sheen; Cu-stem, anal margin and discal spot black with violet sheen, with a few light brownish scales; apical area black with violet sheen, with a few snow-white scales with bluish hue; discal spot relatively broad with a long, narrow, cuneiform projection proximally; transparent areas well-developed; external transparent area relatively large, divided into 6 cells (cell between veins R4 and R5 minute), on level of vein M1 about 2.5 times as broad as discal spot and ca. 1.5 times as broad as apical area; cilia dark brown with bronze-violet sheen.

Hindwing: transparent; anal area black with violet sheen, densely covered with yellow-olive scales and hairs; veins, discal spot and outer margin black with violet sheen; discal spot extremely narrow and nearly undeveloped; outer margin ca. thrice narrower than cilia; cilia dark brown with bronze-violet sheen.

Male genitalia (genital preparation No. MHNG-2480, GA-050) (Fig. 9). Tegumen-uncus complex narrow; uncus bilobed distally with a small drop-shaped plate of strong pointed setae internally on each side; gnathos small, narrow, membranous with slight sclerotization basally (Fig. 9a); valva (Fig. 9b) elongate-oval; distal field of setae rather well separated from medial one; medial field narrow with short setae; pocket-shaped crista small; ventral lobe relatively broad and long, somewhat exceeding distal margin; saccus relatively broad, mace-shaped basally (Fig. 9c); aedeagus (Fig. 9d) narrow, broadened basally, about as long as valva; vesica with numerous minute cornuti.

Female. Unknown.

Variability. The second specimen of this species from Vietnam (Fig. 2) virtually has neither coloration nor size differences from the holotype, only the external transparent area of the left forewing divided into 5 cell, so a minute cell between veins R4–R5 is absent.

Diagnosis. *M. gorochovi* seems to be closest to *Melittia newara* Moore, 1879, but differs clearly from it by the shape of the external transparent area of the forewing (broader in *newara* (Fig. 3)), by the somewhat different coloration of the hind leg tuft, and by the shape of the male genitalia (gnathos somewhat less developed and sclerotized, pocket-shaped crista less developed and ventral lobe less broad, but slightly longer in *newara*). From *M. binghami* Niceville, 1900, *gorochovi* can be distinguished by the somewhat smaller size (alar expanse 35.0 mm in *binghami*), by the coloration of the hind leg tuft (more yellow in the species compared), and by the shape of the external transparent area of the forewing (broader and cell between veins R4–R5 larger in *binghami*). From *M. indica* Butler, 1874 and *M. siamica* Walker, [1865], *gorochovi* is clearly distinguishable by the shape of the external transparent area of the forewing (smaller, without hyaline cell between veins R4–R5 in these species compared) and by the brighter coloration of the hind leg tuft (with less yellow scales in *indica* and *siamica*).

Bionomics. The host plant unknown. Moths have been netted in April and May.

Habitat. Borders of tropical forest; river valleys; road sides.

Distribution. Hitherto known only from Vietnam and northeastern India (Sikkim).

Melittia newara Moore

(Figs 3, 10)

Melittia newara Moore, 1879: 10. Type locality: "Darjiling" [= NE India, West Bengal, Darjeeling]. Holotype male (ZMHB).

MATERIAL EXAMINED: 1 male, Vietnam, Pahia, Col Bien, 16.IV.1950, J. Romieux leg. (genital preparation No. MHNG-2467, GA-052) (MHNG).

Remarks. This species will be revised by us (Gorbunov & Arita, 1995). The specimen from Vietnam (Fig. 3) slightly smaller than holotype from Darjeeling: alar expanse 32.0 mm; body length 15.8 mm; forewing 14.2 mm; antenna 7.0 mm. Also, this specimen has no small hyaline cell between veins Cu1 and Cu2, the external transparent area of the forewing of this specimen is divided into 6 cells, and the proximal projection of the discal spot of the forewing is somewhat shorter (see loc. cit., text figs 1–2). The male genitalia (Fig. 10) of this specimen has a somewhat narrower ventral lobe of the valva only. This is first record of the species for Vietnam.

Melittia romieuxi sp. n.

(Figs 4, 11)

MATERIAL EXAMINED: 1 male (holotype), Vietnam, Pahia, 19.V.1950, J. Romieux leg. (genital preparation No. MHNG-2483, GA-053) (MHNG).

DESCRIPTION. Male (holotype) (Fig. 4). Alar expanse 29.0 mm; body length 13.8 mm; forewing 12.5 mm; antenna 6.7 mm.

Head: antenna dorsally black with violet sheen, ventrally light brown with a small yellow spot subapically; frons grey-brown with purplish sheen, with a narrow white stripe laterally; labial palpus white mixed with dark brown, with a narrow black stripe extro-ventrally on second joint; vertex grey-brown mixed with pale yellow; pericephalic hairs black dorsally and white laterally.

FIGS 1–8

Melittia spp. 1. *M. gorochovi* Gorbunov, 1988, holotype, male (CG). Alar expanse 29.5 mm. 2. *M. gorochovi* Gorbunov, 1988, male, Vietnam, Sam Con à Vang Lom, 10.IV.1950, J. Romieux leg. (genital preparation No. GA-050) (MHNG). Alar expanse: 30.0 mm. 3. *M. newara* Moore, 1879, male, Vietnam, Pahia, Col Bien, 16.IV.1950, J. Romieux leg. (genital preparation No. GA-052) (MHNG). Alar expanse: 32.0 mm. 4. *M. romieuxi* sp. n., holotype, male (MHNG). Alar expanse: 29.0 mm. 5. *M. nepcha* Moore, 1879, male, Vietnam, Shonla prov., Shongma, Ma River, 4–9.X.1987, N.L. Orlov leg. (CG). Alar expanse: 32.0 mm. 6. *M. luzonica* sp. n., holotype, male (MHNG). Alar expanse 28.0 mm. 7. *M. eurytion* (Westwood, 1848), male, Vietnam, Sam Con à Vang Lom, 10.IV.1950, J. Romieux leg. (MHNG). Alar expanse: 29.0 mm. 8. *M. eurytion* (Westwood, 1848), female, Philippines, Palawan, Puerto Princesa, oct. 1925 (MHNG). Alar expanse: 29.5 mm.



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Thorax: patagia brown with green-bronze sheen, with admixture of olive-green scales anteriorly and laterally; tegula, meso- and metathorax grey-brown with bronze-purple sheen, covered with olive-green scales; thorax laterally grey with purplish sheen, with a few white scales.

Legs: fore coxa black with bronzed sheen, with pale yellow to white stripe baso-internally; mid tibia externally black with green-violet sheen, with a small white with blue hue spot medially; internally grey with bronze-purple sheen, with a small pale yellow to white spot apically; spurs black; hind legs broken off.

Abdomen: dorsally green-brown; tergites 1 and 2 covered with thin olive-green scales; tergite 2 with a narrow, yellow to pale yellow, margin distally; distal margin of third tergite laterally with a few yellow scales; ventrally grey mixed with whitish scales; anal tuft small grey-brown with a few whitish scales.

Forewing: basally black with a few olive-green and grey scales; costal and anal margins, Cu-stem, discal spot, veins within external transparent area and apical area black with violet sheen; discal spot narrow with a small cuneiform broadening proximally; apical area very narrow, developed only at tip of wing; transparent areas well-developed; external transparent area extremely large, rounded apically, divided into 7 cells (cell between veins Cu1 and Cu2 narrow), about 7 times as broad as discal spot; cilia dark brown with bronze-violet sheen.

Hindwing: transparent; anal area dark brown to black with violet sheen, with a few pale yellow scales and yellow hairs; veins and outer margin black with violet sheen; discal spot extremely narrow; outer margin narrow, *ca.* twice as narrow as cilia; cilia dark brown with bronze-violet sheen.

Male genitalia (holotype, genital preparation No. MHNG-2483, GA-053) (Fig. 11). Tegumen-uncus complex narrow; uncus bilobed distally with a small drop-shaped plate of strong pointed setae internally on each side; gnathos small, narrow, membranous, nearly without sclerotization (Fig. 11a); valva (Fig. 11b) elongate-oval; distal field of setae rather well separated from medial one; medial field triangular, with short setae; pocket-shaped crista small; ventral lobe broad and short, not exceeding distal margin; saccus relatively broad, mace-shaped basally (Fig. 11c); aedeagus (Fig. 11d) narrow, broadened basally, somewhat longer than valva; vesica with a few minute cornuti.

Female. Unknown.

Variability. Unknown.

Diagnosis. Superficially, this new species appears closest to *M. newara* Moore, 1879, but can be separated from it by the coloration of the vertex (dark brown to black mixed with yellow in *newara*), abdomen dorsally (dark brown to black with purplish sheen; tergite 2 covered with thin olive-green scales basally; tergites 2 and 3 each with a narrow yellow margin distally in *newara*), and anal area of the hindwing (dark brown to black with a narrow yellow strip in the species compared), and by the form of the discal spot of the forewing (relatively narrow with a narrow and long projection proximally in *newara*). From other closely related species (*M. gorochovi* Gorbunov, 1988, *M. callosoma* Hampson, 1910, *M. indica* Butler, 1874, *M. kulluana*

Moore, 1888, and *M. proxima* Le Cerf, 1917), *romieuxi* sp. nov. is distinguishable by the larger external transparent area of the forewing (relatively narrow, divided into 5–6 cells in all these species compared (see Figs 1–2)) and by the shape of the discal spot of the forewing (with a relatively long, narrow, cuneiform projection proximally in the species compared). Besides that, *romieuxi* sp. nov. clearly differs from all these congeners by the structure of the male genitalia, especially the shape of the valva (compare with Figs 9–10).

Bionomics. The host plant unknown. Holotype specimen has been collected in May.

Habitat. Unknown.

Distribution. Known only from the type locality.

Etymology. We name this species after J. Romieux, who collected that species and many other Sesiidae in Vietnam which we have studied.

Melittia nepcha Moore

(Fig. 5)

Melittia nepcha Moore, 1879: 10. Type locality: Darjiling [= northeastern India, West Bengal, Darjeeling]. Holotype male (ZMHB).

= *Melittia amboinensis vietnamica* Gorbunov

Melittia amboinensis vietnamica Gorbunov, 1988: 195, Figs. 2, 4–2. Type locality: North Vietnam, Shonla prov., Shongma. Holotype male (CG).

GORBUNOV & ARITA, 1995 (as a synonym of *M. nepcha* Moore, 1879).

MATERIAL EXAMINED: 1 male (holotype of *M. amboinensis vietnamica* Gorbunov, 1988), Vietnam, Shonla prov., Shongma, 3–10.V.1986, A.V. Gorokhov leg. (CG); 1 male, Vietnam, Shonla prov., Shongma, Ma River, 4–9.X.1987, N.L. Orlov leg. (CG).

Remarks. This species has been revised by the authors (Gorbunov & Arita, 1995). Specimens from Vietnam slightly vary in individual size: alar expanse 31.5–32.0 mm; body length 15.2–16.0 mm; forewing 13.5–14.0 mm; antenna 6.5–7.0 mm only and have not differences from the holotype in coloration.

Melittia luzonica sp. nov.

(Figs 6, 12)

= *Melittia siamica* Walker, [1864] – Diakonoff, [1968]: 233, Figs 722–723 (misdetermination).

MATERIAL EXAMINED. 1 male (holotype), Philippines, Luzon Id., Binoessoc, (genital preparation No. MHNG-2482, GA-078) (MHNG).

DESCRIPTION. Male (holotype) (Fig. 6). Alar expanse 28.0 mm; body length 14.0 mm; forewing 11.6 mm; antenna 6.2 mm.

Head: antenna dorsally dark brown to black with purple-violet sheen, with individual snow-white scales at fore margin, ventrally yellow; frons grey-brown with a very narrow white stripe laterally; labial palpus dark brown to black with a few white scales ventrally; vertex dark brown mixed with black hair-like scales, with a narrow, V-shaped, white stripe between ocelli posteriorly; pericephalic hairs black dorsally and white laterally.

Thorax: patagia black with violet sheen, with a small pale yellow spot laterally; tegula and mesothorax dark brown with violet sheen; metathorax grey-brown

with two tufts of hair-like scales dark grey mixed with dirty yellow; thorax laterally dark grey with violet sheen, with a few pale yellow scales anteriorly.

Legs: fore coxa dark brown with greenish sheen, with a few pale yellow scales basally; mid tibia externally dark brown to black with green-purple sheen, with admixture of individual rusty scales, with a small, diffuse, snow-white with blue hue spot at basal third, and with a small dirty yellow spot dorso-apically; mid tarsus yellow to pale yellow, externally four apical tarsomeres black with greenish sheen; hind tibia mixed with dirty yellow, light brown, dark brown and a few white scales, with a small snow-white with blue hue spot at base of mid spurs externally; spurs dark brown to black with violet sheen; hind tarsus black with green sheen, with a few white and dirty yellow scales basally and with a small snow-white spot medio-ventrally.

Abdomen: dorsally tergite 1 dark grey, remaining tergites black with violet sheen; tergites 2–4 and 6–7 each with a narrow, distinct, pale yellow stripe distally; ventrally dark brown with greenish sheen; sternite 3 with a sparse pale yellow to white stripe distally; sternites 4–6 each with a small pale yellow to white spot laterally on distal margin; anal tuft small, dark brown to black with greenish sheen, mixed with yellowish scales distally.

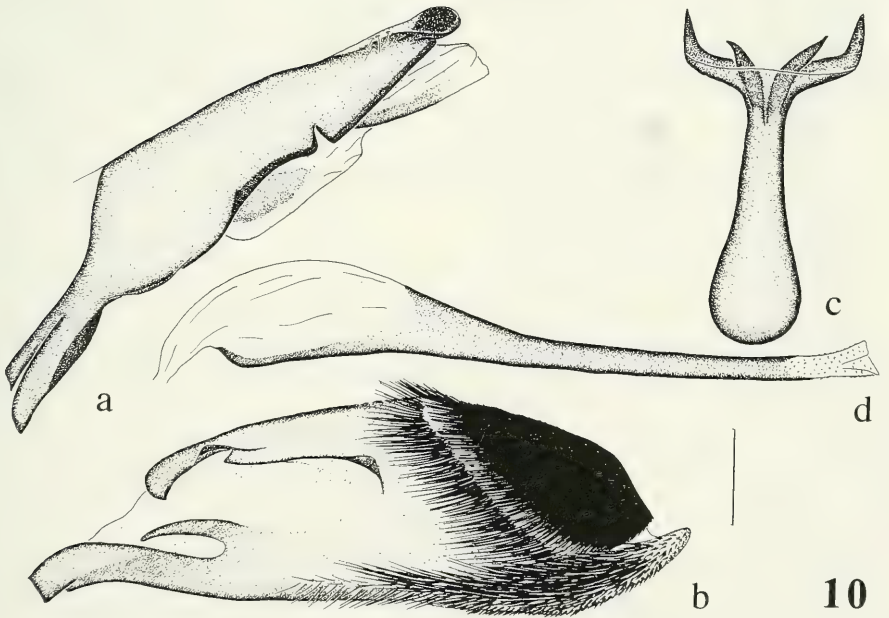
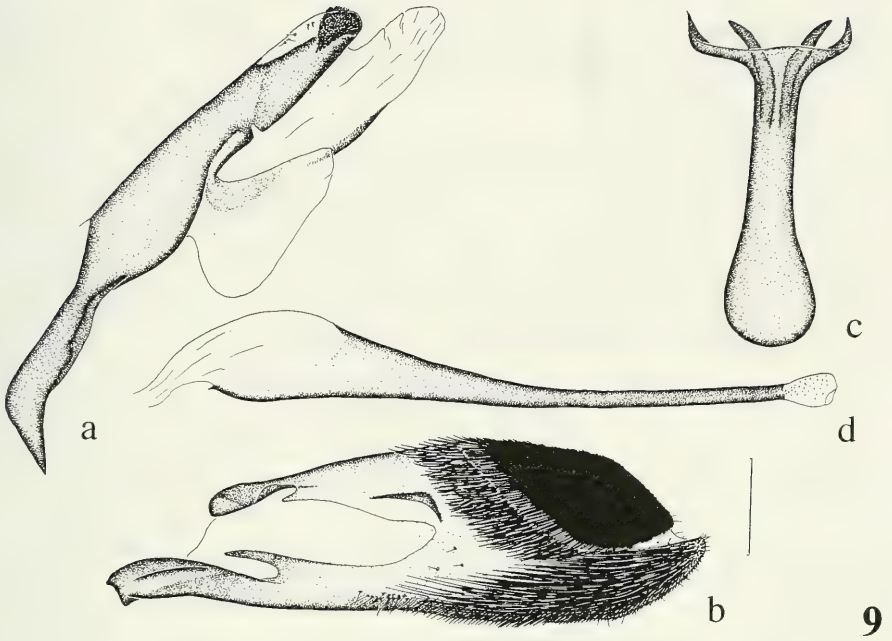
Forewing: costal margin, Cu-stem, discal spot, veins within external transparent area and apical area black with bronzed sheen; anal margin black with bronzed sheen, with admixture of individual olive-brown scales; discal spot narrow with a short pointed projection proximally; transparent areas well-developed; external transparent area rounded distally, divided into 6 cells (including minute cell between veins R4–R5), *ca.* 4.5 times broader than discal spot on level of vein M2; cilia dark grey with bronzed sheen.

Hindwing: transparent; anal area covered with dark brown and olive-brown scales; veins and outer margin narrowly black; discal spot undeveloped; outer margin about thrice narrower than cilia; cilia dark grey with bronzed sheen.

Male genitalia (holotype, preparation No. MHNG-2482, GA-078) (Fig. 12). Tegumen-uncus complex narrow; uncus bilobed distally with a small drop-shaped plate of strong pointed setae internally on each side; gnathos rather large, broad, membranous with well-sclerotized oval plate basally; pedunculus with a long seta (Fig. 12a); valva (Fig. 12b) trapeziform; distal field of setae nearly not separated from medial one; setae of medial field relatively short, slightly covering pocket-shaped crista; ventral lobe relatively narrow, barely exceeding distal margin; saccus (Fig. 12c) narrow, gradually broadened basally; aedeagus (Fig. 12d) narrow, somewhat shorter than valva; vesica with numerous minute cornuti.

FIGS 9–10

Male genitalia of *Melittia* spp. 9. *M. gorochovi* Gorbunov, 1988 (genital preparation No. GA-050). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedeagus. Scale bar: 0.5 mm. 10. *M. newara* Moore, 1879 (genital preparation No. GA-052). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedeagus. Scale bar: 0.5 mm.



Female. As far as we can tell from the figures published by DIAKONOFF (1968, Figs 722 and 723), the female of this new species has virtually no differences in coloration from male, but perhaps is more robust than male.

Variability. Unknown.

Diagnosis. This new species belongs to the *amboinensis* species-group. It seems to be the closest to *M. nepcha* Moore, 1879, but can be distinguished by the somewhat different coloration of the hind leg luft (dark brown both basally and apically, medially mixed with brown, light brown to yellow-brown and snow-white scales; extro-ventrally with three small white spots between bases of tibia and mid spurs, and somewhat distally both mid and apical spurs in *nepcha*) and, especially, by the coloration of the abdomen (dorsally dark brown to black mixed with olive-green scales on tergites 2, 3 and 5; all tergites with a narrow, olive-green, distal margin; ventrally entirely yellow to pale yellow in *nepcha*). However, these two species are easy separable by the male genitalia (setae of medial field of valva long, entirely covering pocket-shaped crista; saccus mace-shaped basally in *nepcha*). From *M. amboinensis* Felder, 1861, *luzonica* sp. nov. differs also by the coloration of the hind leg (with more rusty-brown scales dorsally in *amboinensis*) and abdomen (without a narrow, distinct, pale yellow stripe distally in *amboinensis*). From *M. batchiana* Le Cerf, 1917 this new species is clearly distinguishable by the more developed transparent areas of the forewing (external transparent area divided into 4 cells, on level of vein M2 about 1.6 times broader than apical area in *batchiana*). From other closely related species, such as *M. dorsatiformis* Hampson, 1891, *M. distincta* Le Cerf, 1916, *M. congruens* Swinhoe, 1890, and presently taxonomically unclear taxa described by F. Le Cerf (1916) (*meeki*, *celebica*, *javana*, *doddi*), *luzonica* sp. nov. clearly differs by the coloration of the abdomen (dorsally without a narrow, distinct, pale yellow, distal stripe; ventrally entirely pale yellow to yellow in all these taxa compared).

Bionomics and habitat. Unknown.

Etymology. This new species is named after the island Luzon, Philippine Is., where this species was collected.

Melittia eurytion (Westwood, 1848)

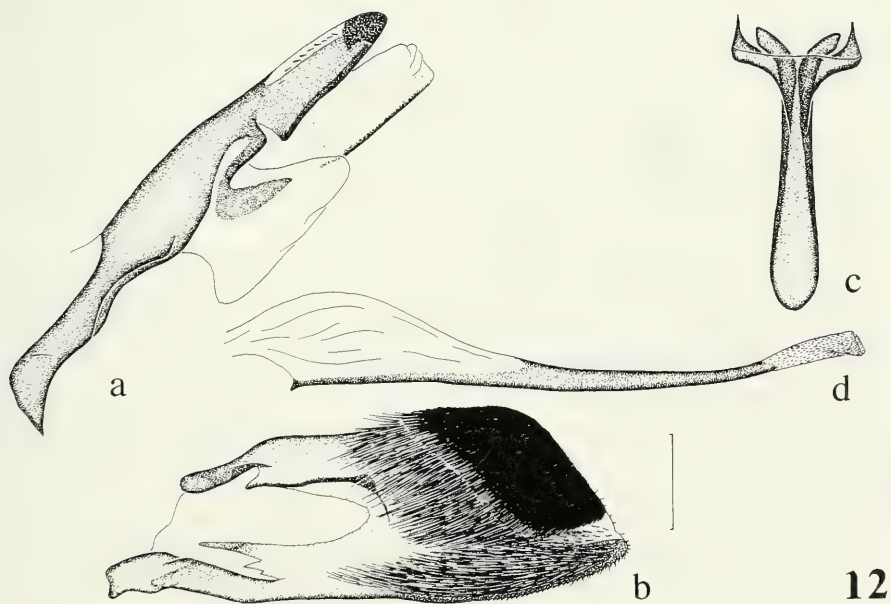
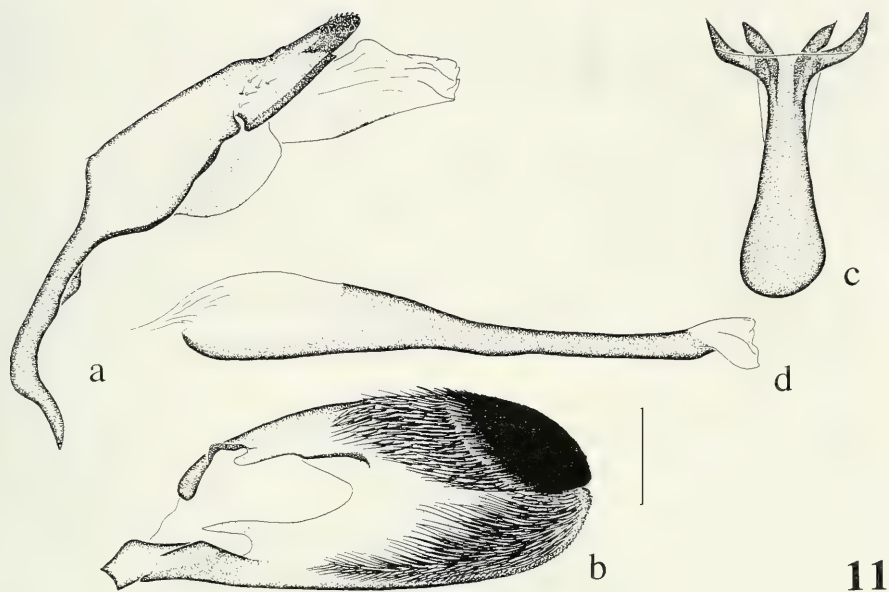
(Figs 7–8, 13–14)

Trochilium enrytion Westwood, 1848: 62, Pl. 30, Fig. 5. Type locality: "India Sylhet" [= NE Bangladesh, Sylhet]. Lectotype female (BMNH) (designated by Spatenka, 1992).

Melittia eurytion (Westwood, 1848) — Diakonoff, [1968]: 233, Figs 726–727.

FIGS. 11–12

Male genitalia of *Melittia* spp. 11. *M. romieuxi* sp. nov., holotype (genital preparation No. GA-053). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedeagus. Scale bar: 0.5 mm. 12. *M. luzonica* sp. nov., holotype (genital preparation No. GA-078). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedeagus. Scale bar: 0.5 mm.



MATERIAL EXAMINED. 1 male, Vietnam, Sam Con à Vang Lom, 10.IV.1950, J. Romieux leg. (MHNG); 1 male, Vietnam, Col Noé, Lao Sang, 19.V.1950, J. Romieux leg. (genital preparation No. GA-056) (MHNG); 1 female, Philippines, Manila, Palanoz, Apr. 28 (genital preparation No. GA-084) (MHNG); 1 female, Philippines, Palawan, Puerto Princesa, oct. 1925 (MHNG).

DESCRIPTION. Male (Fig. 7). Alar expanse 29.0 mm; body length 14.5 mm; forewing 12.5 mm; antennae broken off.

Head: antenna broken off; frons grey-brown with purple sheen, with a narrow white stripe laterally; vertex grey-brown with purple sheen mixed with black, white and yellow hair-like scales; labial palpus white basally; mid joint white with two black longitudinal stripes ventrally at margins, apical joint black with a few pale yellow scales; pericephalic hairs dorsally black mixed with yellow, laterally pale yellow to white.

Thorax: patagia dorsally dark brown with green-purple sheen, anteriorly covered with more thin olive-green scales, laterally pale yellow to white; tegula and mesothorax dark brown to black with purple-gold sheen, covered with a few olive-green scales anteriorly; metathorax somewhat paler with two tufts of white hair-like scales laterally and a few white with blue hue scales medially; thorax laterally mixed with grey and white scales.

Legs: fore coxa white to pale yellow with admixture of a few dark brown scales; mid tibia dark brown with gold sheen, with a small white with blue hue spot both medio-externally and ventrally; hind tibial tuft black with greenish sheen, mixed with white dorsally and externally, with two large white with blue hue spots both somewhat basally of mid spurs and between base of both pairs of spurs ventrally; spurs black, external spurs of both pairs with white inside; hind tarsal tuft black with greenish sheen, with a small white spot medio-externally.

Abdomen: dorsally black with green-violet sheen, with admixture of individual, narrow, white scales; scales of distal margin of each tergite with bronzed sheen; additionally, tergites 2, 4, 6 and 7 each with a few white with blue hue scales distally; ventrally sternite 1+2 black with a few white scales, other sternites entirely white; anal tuft small, black, tipped white.

Forewing: costal and anal margins, Cu-stem, discal spot, apical area and veins within external transparent area dark brown to black with bronze-purple sheen; basally at anal margin with admixture of individual olive-green and white with blue hue scales; Cu-stem basally shortly and narrowly bordered with white scales; apical area with individual snow white with blue hue scales; discal spot broad with a long cuneiform projection proximally; transparent areas well-developed; external transparent area divided into 5 cells, narrowed costally, about as broad as apical area and discal spot on level of vein M₂; cilia dark brown with bronzed sheen.

Hindwing: transparent; anal area black, but densely covered with light bluish scales; veins, discal spot and outer margin narrowly black with bronze-purple sheen; cilia dark brown with bronzed sheen.

Male genitalia (genital preparation No. MHNG-2468, GA-056) (Fig. 13). Tegumen-uncus complex narrow; uncus bilobed distally with a small oval plate of

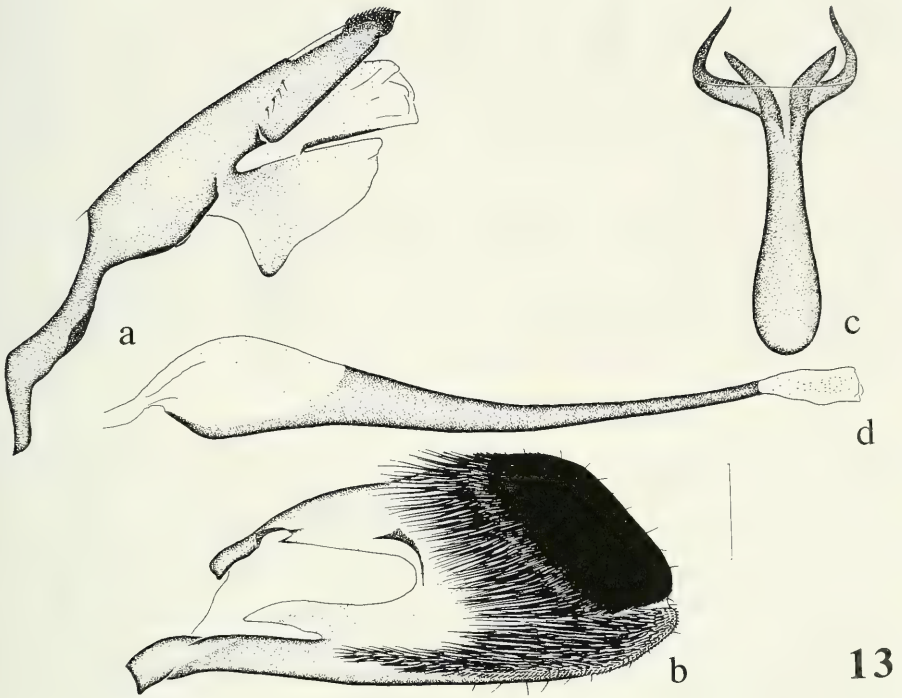


FIG.13

Male genitalia of *Melittia eurytion* (Westwood, 1848) (genital preparation No. GA-056). a. Tegumen-uncus complex. b. Valva. c. Saccus. d. Aedeagus. Scale bar: 0.5 mm.

strong pointed setae internally on each side; gnathos rather large, broad, membranous with broad but slightly sclerotized plate medially (Fig. 13a); valva (Fig. 13b) trapeziform; distal field of setae rather well separated from medial one; setae of medial field relatively long, not reaching pocket-shaped crista; ventral lobe relatively narrow, barely exceeding distal margin; saccus (Fig. 13c) narrow, mace-shaped basally; aedeagus (Fig. 13d) narrow, broadened basally, somewhat longer than valva; vesica with numerous minute cornuti.

Female (Fig. 8). Differs little from the male as to coloration and size, though slightly more robust.

Female genitalia (genital preparation No. MHNG-2481, GA-084) (Fig. 14). Papilla anales slightly sclerotized, covered with short setae; 8th tergite relatively broad with relatively short setae at distal margin and with two long setae at inner margin ventrally; both apophyses nearly equal in length; apophyses anterior with a

long, narrow appendix baso-ventrally; ostium bursae opening near posterior margin of 7th sternite, slightly funnel-shaped, narrow, ring-shaped well-sclerotized; antrum narrow, membranous; ductus bursae narrow, relatively long, membranous; corpus bursae nearly pear-shaped, membranous with numerous wrinkles, with signum relatively large, narrowly pear-shaped, with numerous small, well-sclerotized thorns, with ca. 10 transverse, rather well-sclerotized, dentate stripes anteriorly, shortly bifurcate posteriorly (Fig. 14b).

Variability. This wide-spread species of the Oriental Region is extremely variable in individual size (alar expanse 26.0–33.0 mm), coloration of the labial palpus and legs (more or less white or pale yellow scales) and, especially, in the size of the external transparent area of the forewing (divided into 4–5 cells and narrower than apical area and discal spot on level of vein M2 about 1.1–2.0 times). Also, it slightly varies in the male (shape of gnathos and valva) and female (signum of corpus bursae) genitalia.

Diagnosis. It seems to be the closest to *M. formosana* Matsumura, 1911, *M. chalybescens* Miskin, 1892, *M. flaviventris* Hampson, 1919, and *M. volatilis* Swinhoe, 1890. Superficially, from *formosana*, *eurytion* can be distinguished by the relatively narrower discal spot of the forewing, but they rather clearly differ by the male genitalia (valva shortly oval; distal and medial fields of setae nearly not separated; saccus narrower in the species compared). From *chalybescens*, *eurytion* is distinguishable by the coloration of the anal area of the both wings (bright blue-green in *chalybescens*) and by the male genitalia (valva broadly oval; saccus bilobed basally in *chalybescens*). From *flaviventris*, this species can be easily separated by the shape of the anterior and external transparent areas of the forewing (anterior transparent area not divided into two longitudinal stripes by proximal projection of discal spot; external transparent area divided into 5–6 cells, about 1.8 times as broad as apical area on level of vein M2 in *flaviventris*). From *volatilis*, *eurytion* clearly differs by the more well-developed transparent areas of the forewing (anterior transparent area very short and narrow; external transparent area divided only into one small cell between veins M3–Cu1 in *volatilis*).

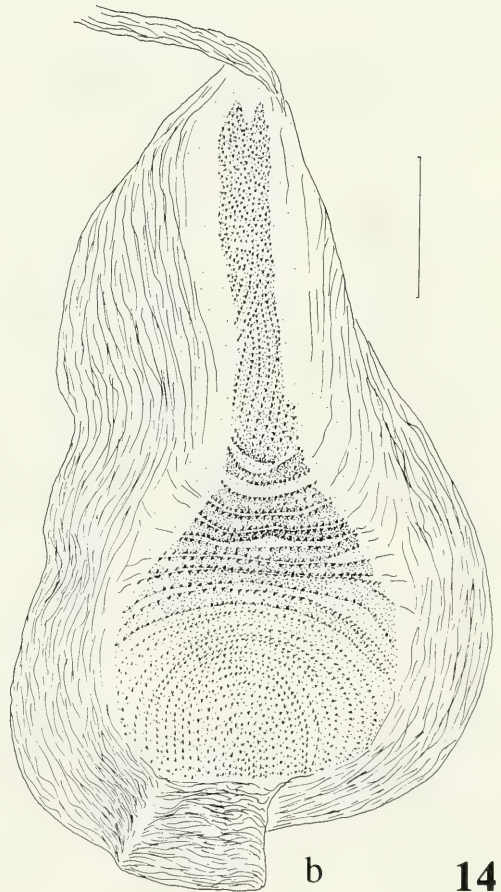
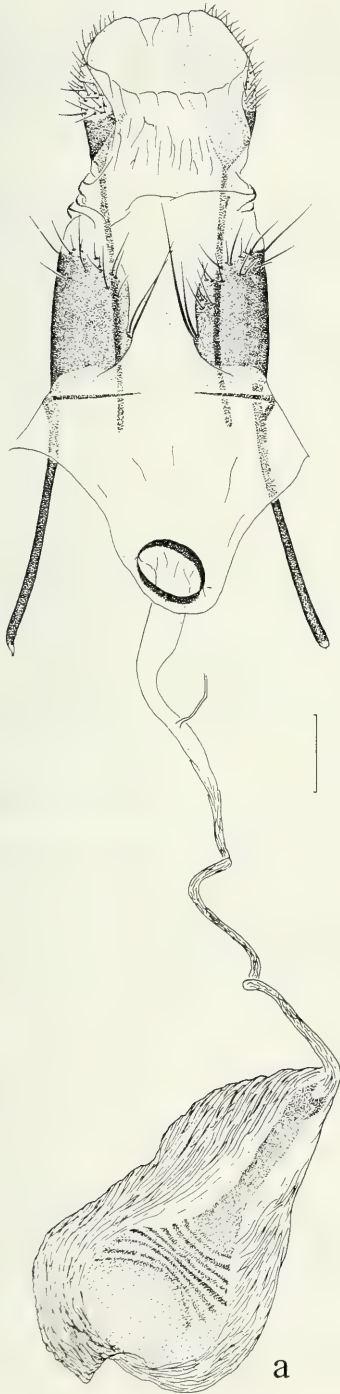
Bionomics. Specific host plant unknown, but most likely a species of the family Cucurbitaceae. Imagos collected in April–May.

Habitat. Unknown.

Distribution. This species has been reported from West China, Nepal, West (Bombay), Northeast (Sikkim) and East India (Assam), Sri Lanka, Myanmar, Philippines (Luzon, Mindanao). We record it for Vietnam and Palawan Id. (Philippines) for the first time. Additionally, E. STRAND [1916] described an aberration of *M.*

FIG. 14

Female genitalia of *Melittia eurytion* (Westwood, 1848) (genital preparation No. GA-084). a. General view. b. Corpus bursae. Scale bar: 0.5 mm.



a

b

14

eurytion, *microfenestrata* Strand [1916] from Taiwan [Formosa]. At present we believe that all citations of *eurytion* for Taiwan should be regarded to *M. formosana* Matsumura, 1911 and indicate *Melittia eurytion* ab. *microfenestrata* Strand, [1916] (comb. nov. et syn. nov.) as a new synonym of *M. formosana* Matsumura, 1911 herein.

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